

SYSTEM AND METHOD FOR DETERMINING OPTIMAL REACTION PARAMETERS USING CONTINUOUSLY RUNNING PROCESS

Abstract of the Disclosure

A reaction system enables a plurality of optimization experiments for a
5 reaction to be performed continuously, to enable optimal reaction parameters to be
determined. Dilution pumps are included to automatically vary the solvent mixed
with reactants so a concentration of each reactant can be selectively varied. The
reactants are introduced into a reaction module selectively coupled to residence
time chambers or directly to an analytical unit. The analytical unit determines the
10 yield and/or quality for each optimization experiment, enabling optimal
parameters to be determined. Residence time chambers can be employed
sequentially to enable total residence time to be varied. The controller performs
as many experiments as required to enable each parameter to be varied according
to a predefined testing program and can redefine a testing program based on the
15 results from previous experiments. At least two reaction parameters can be varied
according to periodic functions to further enhance analytical efficiency.